

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A signal encoding system (100) comprising:
  - means for receiving a signal;
  - a pre-encoder, implemented in hardware, for pre-encoding the signal to generate a pre-encoded signal; and
  - watermark processing means comprising:
    - a decoder, implemented in hardware, for decoding the pre-encoded signal to generate a decoded signal;
    - a watermark embedder, implemented in hardware, for inserting a watermark in the decoded signal to generate a watermarked signal; and
    - a re-encoder, implemented in hardware, for re-encoding the watermarked signal to generate a watermarked encoded signal, wherein the pre-encoder generates encoding assistance data for a different encoding data rate than an encoding data rate of the pre-encoded signal, said encoding assistance data including at least one of encoding quantization control data and encoding scale factor data, and the re-encoder re-encodes the watermarked signal at said different encoding data rate in response to the encoding assistance data.

2. (Previously Presented) The signal encoding system as claimed in claim 1, wherein the pre-encoder includes the encoding assistance data in the pre-encoded signal.

3. (Previously Presented) The signal encoding system as claimed in claim 2, wherein the pre-encoder includes the encoding assistance data in at least one ancillary data section of the pre-encoded signal.

4. (Previously Presented) The signal encoding system as claimed in claim 1, wherein said signal encoding system further comprises:  
storage means for storing the pre-encoded signal.

5. (Currently Amended) The signal encoding system as claimed in claim 4, wherein the storage means additionally stores the encoding assistance data.

6-8. (Cancelled).

9. (Currently Amended) The signal encoding system as claimed in claim 81, wherein the encoding scale factor data comprises a scale factor offset associated with a scale factor offset value between a first encoding rate and a second encoding rate.

10. (Previously Presented) The signal encoding system as claimed in claim 9, wherein the first encoding rate is an encoding rate of

the pre-encoded data signal, and the second encoding data rate is an encoding rate of the watermarked encoded signal.

11. (Cancelled).

12. (Currently Amended) The signal encoding system as claimed in claim 910, wherein the re-encoder generates the watermarked encoded signal at the second encoding rate by determining re-encoding scale factors in response to the scale factor offset and scale factor values associated with the first encoding rate.

13. (Currently Amended) The signal encoding system as claimed in claim 910, wherein the pre-encoder replaces scale-factors of the pre-encoded signal by a shifted version of the scale-factors of the second encoding rate.

14. (Previously Presented) The signal encoding system as claimed in claim 1, wherein the encoding assistance data comprises encoding rate independent encoding parameters that are independent of the encoding rate.

15. (Cancelled).

16. (Previously Presented) The signal encoding system as claimed in claim 1, wherein the encoding assistance data comprises perceptual model data.

17. (Previously Presented) The signal encoding system as claimed in claim 1, wherein the re-encoder operates frame aligned with the pre-encoder.

18. (Previously Presented) The signal encoding system as claimed in claim 1, wherein the received signal is an audio signal.

19. (Previously Presented) The signal encoding system as claimed in claim 18, wherein the pre-encoded signal is pre-encoded in accordance with an MPEG audio compression standard.

20. (Previously Presented) The signal encoding system as claimed in claim 1, wherein the received signal is a video signal.

21. (Currently Amended) A signal distribution system comprising a signal encoding system as claimed in claim 4, and wherein the pre-encoder pre-encodes a multiplicity of signals; the storage means stores the multiplicity of signals and the watermark processing means individually embeds a watermark in a plurality of signals, and wherein said signal distribution means further comprises means for distributing the plurality of signals.

22. (Currently Amended) A method of encoding a signal, said method comprising the steps of:  
receiving a signal;

pre-encoding, using a hardware pre-encoder, the signal to generate a pre-encoded signal;

generating encoding assistance data in association with the pre-encoding;

decoding, using a hardware decoder, the pre-encoded signal to generate a decoded signal;

inserting, using a hardware watermark embedder, a watermark in the decoded signal to generate a watermarked signal; and

re-encoding, using a hardware re-encoder, the watermarked signal to generate a watermarked encoded signal in response to the encoding assistance data,

wherein the generated encoding assistance data is for a different encoding data rate than an encoding data rate of the pre-encoded signal,

wherein the encoding assistance data includes at least one of encoding quantization control data and encoding scale factor data, and wherein the re-encoding step comprises re-encoding the watermarked signal at the different encoding rate.

23-26. (Cancelled).

27. (Currently Amended) A computer-readable medium having recorded thereon a computer program enabling a processor to carry out ~~the-a~~ method of encoding a signal, said method comprising the steps of:

receiving a signal;  
pre-encoding the signal to generate a pre-encoded signal;  
generating encoding assistance data in association with  
the pre-encoding;  
decoding the pre-encoded signal to generate a decoded  
signal;  
inserting a watermark in the decoded signal to generate a  
watermarked signal; and  
re-encoding the watermarked signal to generate a  
watermarked encoded signal in response to the encoding assistance  
data,  
wherein the generated encoding assistance data is for a different  
encoding data rate than an encoding data rate of the pre-encoded  
signal,  
wherein the encoding assistance data includes at least one of  
encoding quantization control data and encoding scale factor data,  
and wherein the re-encoding step comprises re-encoding the  
watermarked signal at the different encoding rateass claimed in  
elaim 22.

28. (Cancelled).